

REMARKS

Claims 1, 2 and 6-9 are in this application and are presented for consideration. By this amendment, Applicant has amended claims 1 and 2. Claims 3-5 have been canceled subject to Applicant's right to file a divisional application for the features covered in the claims. Applicant has also added new claims 6-9.

The disclosure has been objected to because of minor informalities.

Applicant has amended the specification as shown above to address this issue. Applicant wishes to thank the Examiner for the careful review of the specification.

Claim 2 has been objected to because of a minor informality.

Applicant has amended claim 2 to address this issue. Applicant wishes to thank the Examiner for the helpful remarks.

Claims 1 and 2 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Passafiume et al. (U.S. 4,216,687) in view of Roesen (U.S. 1,878,184).

The present invention relates to an apparatus for separating a paper web in a rewinding machine. The invention comprises a rewinding machine that includes a web-feeding roller. A web is provided, which has a plurality of transverse perforation lines. A pneumatic tearing means is provided, which includes a reservoir of compressed air, a plurality of nozzles and a plurality of solenoid valves. The nozzles and the solenoid valves are located within the web-feeding roller. The nozzles and the solenoid valves receive compressed air from the reservoir to produce a jet of compressed air that separates the web at a perforation line, which divides a last sheet of a log being formed from a first sheet of the next log to be formed. This

advantageously ensures that the web is accurately separated no matter how fast the web is fed. The prior art as a whole fails to disclose such features and such accurate tearing advantages.

Passafiume et al. discloses a pair of rolls 10 and 11 disposed adjacent to one another and spaced apart from one another to form a nip 13. The upper roll 10 comprises an outer shell 8 and an inner shell 9. The outer shell has a pair of spaced, circumferentially extending recesses 15 disposed about its periphery. The recesses cooperate to define a pattern that corresponds to the shape desired to be produced in the batt of loosely compacted fibrous material to be treated by the apparatus. Equally spaced, radially disposed passages extend through the wall of the outer shell to form perforations 16 at the bottom of the recesses to aid in allowing for the escape and dissipation of the high-pressure air and pulp dust. The inner shell 9 carries a slot 7 disposed transverse of its periphery at the position adjacent to the bottom roll 11. The outer shell 8 is rotatable about the inner shell 9. The bottom roll 11 comprises a stationary inner shell 20 and a rotatable outer shell 21. The inner shell is hollow and air is fed to the inside of that shell through the opening in shaft 23. There is a slot 24 running along the width of the desired pattern and extending through the thickness of the shell. The slot 24 is disposed at that portion of the periphery closest to the upper roll and directs the high pressure air from the inside of the inner shell towards the upper roll. The rotatable outer shell has a pattern of openings 17 complimentary to the recessed pattern in the upper roll. Air is continuously fed through the opening in the stationary shaft in the bottom roll.

Passafiume et al. fails to teach and fails to suggest the combination of a rewinding machine comprising a web-feeding roller and a pneumatic tearing means for tearing a web at

a perforation line of the web wherein the pneumatic tearing means includes a reservoir of compressed air, a plurality of nozzles and a plurality of solenoid valves. At most, Passafiume et al. discloses that air is continuously fed through an opening in a stationary shaft in a bottom roll. However, this is not a reservoir as claimed since air continuously flows through transverse opening 24. In fact, Passafiume et al. does not provide any mention of a plurality of nozzles and a plurality of solenoid valves that are located within the bottom roll 11 as claimed. Compared with the present invention, Passafiume et al. merely discloses a transverse opening 24 that is in communication with openings 17. The transverse opening 24 is not a plurality of nozzles as featured in the present invention. In contrast to Passafiume et al., a plurality of nozzles and a plurality of solenoid valves of the present invention are located within a web-feeding roller. The nozzles and the valves produce a jet of compressed air directed at the web so that the web is separated at a perforation line of the web. This advantageously provides an accurate and reliable means of dividing the web. Passafiume et al. fails to disclose such an accurate means of tearing a web since Passafiume et al. only discloses an opening 24 in communication with openings 17, but the opening 24 is not a plurality of nozzles as claimed. As such, the prior art as a whole takes a different approach and fails to direct the person of ordinary skill in the art toward each feature of the claimed combination.

Roesen discloses a reel 10 for supporting web rolls 11 for supplying a web W to a printing press over a guide roll 12. One or more nozzles 20 are mounted on a frame 16 for severing the web W when it passes an expiring roll 17. The two nozzles are controlled by their own valves 21 and each valve is actuated by a solenoid 22 which is connected by a wire 23 with

a commutator 24 on an axis of the roll 11 rotating with it.

Roesen fails to teach or suggest the combination of a plurality of nozzles associated with a plurality of solenoid valves located within a web-feeding roller wherein the nozzles and valves receive compressed air from a reservoir of compressed air. At most, Roesen discloses a nozzle 20 directed at a web W for separating the web W. However, Roesen fails to direct the person of ordinary skill in the art toward placing the nozzle 20 within a web-feeding roller of a rewinding machine as claimed. In fact, Roesen does not provide any teaching or suggestion for providing a reservoir of compressed air within a web-feeding roller as featured in the recited combination. Compared with Roesen, the present invention provides a tearing means within a web-feeding roller so that the roller can feed a web along a particular path and to tear the web when necessary with the tearing means. This advantageously provides a space efficient design since a separate tearing means located outside of the roller is not necessary. Roesen fails to disclose such space saving advantages since Roesen does not direct the person of ordinary skill in the art toward a web-feeding roller having a tearing means located therein. As such, Applicant respectfully requests that the Examiner favorably consider claims 1 and 2 as now presented.

Applicant has added new claims 6-9. New independent claims 6 and 8 provide for features similar to those found in claim 1, but in different claim language. Specifically, claim 8 highlights that the winding roller increases speed so that the web is in a stretched state when the nozzles produce the jet of compressed air. This advantageously ensures that the web is accurately separated at the precise location of the perforation line of the web. Applicant

respectfully requests that the Examiner favorably consider new claims 6-9.

Further and favorable consideration on the merits is requested.

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Attached: Petition for Two Month Extension of Time

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